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ABSTRACT

This paper surveys and evaluates the research since 1975 on college and university student suicidality in the United States. It focuses on factors which contribute to suicidality, preventive responses to suicide and how well the preventive responses address the contributing factors. Contributing factors examined include various feeling states (depression, helplessness, loneliness), stress, religiosity, and family factors. A review of multiple factor studies explores social desirability; family problems and feeling states; roles of cognitive rigidity and life stress; the interaction of helplessness, hopelessness, and interpersonal attachments; and the interactions of cognitive, social, and emotional factors with stress. Depression, hopelessness, helplessness, and loneliness were usually present in combination in the suicidal samples studied, with hopelessness appearing to be the best predictor of more lethal behavior. Preventive responses reviewed include both interpersonal interactions and university-structured programs in formal and informal settings. The generalizability of research findings is discussed and areas of further study are delineated. A need is seen for studies which assess the effects of prevention measures on specific contributing factors as well as on suicidality in general. It is noted that most of the studies reviewed need to be replicated using nationwide samples from a wider variety of institutions in order to increase generalization of results to the national population. (65 references) (NB)

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SUICIDALITY AMONG COLLEGE AND UNIVERSITY STUDENTS: CONTRIBUTING FACTORS AND PREVENTIVE RESPONSE

A Doctoral Research Paper

Presented to

the Faculty of the Rosemead School of Psychology

Biola University

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Psychology

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by

Joan Wickham Jones

May 1991

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SUICIDALITY AMONG COLLEGE AND UNIVERSITY STUDENTS:

CONTRIBUTING FACTORS AND PREVENTIVE RESPONSE

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ABSTRACT

SUICIDALITY AMONG COLLEGE AND UNIVERSITY STUDENTS:
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This paper surveys and evaluates the research since 1975 on college and university student suicidality in the United States. It focuses on factors which contribute to suicidality, preventive responses to suicide and how well the preventive responses address contributing factors. Contributing factors include various feeling states, stress, relational dysfunction and cognitions. Preventive responses reviewed include both interpersonal interactions and university-structured programs in formal and informal settings. The generalizability of research findings is discussed and areas of further study are delineated.

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SUICIDALITY AMONG COLLEGE AND UNIVERSITY STUDENTS: CONTRIBUTING FACTORS AND PREVENTIVE RESPONSE

Introduction

College age suicidality is a serious problem. Data from the United States Bureau of Census (1990) indicated that suicides among 15 to 19 year-olds almost doubled from 1970 to 1986, and among 19 to 24 year-olds they rose 29.5%. The rate among this age group has almost tripled since 1950 (Davis, 1985; Whitaker, 1986). While suicides are the third highest cause of death after accidents and homicides among 15 to 24 year-olds, some researchers believe the incidence of suicide is greatly underestimated. Toolan (1975), Mishara, Baker, and Mishara (1976) and Davis (1985) suggested that up to 50% of the deaths classified as accidents among this age group are actually suicides. Garrison (1989), in her review of the literature on suicidality in schools, concluded that suicidal behavior, including ideation, among college students occurs in 50% to 65% of the population and suicide attempts are made by 15 to 18 %. Researchers suggest that 32% of the college student deaths each year are suicides and estimated that 80% of those who complete a suicide have made at least one previous attempt (Adam, Lohrenz, Harper, & Streiner, 1982; Stalcup, 1978).

Many studies on college-age suicide before 1975 concluded the incidence of suicide for students was substantially higher than for comparable non-student groups. Recent research has addressed validity and generalization issues more thoroughly, and results have demonstrated no significant differences between suicide rates of college students and non-students of the same age (Heinrichs, 1980; Kraft, 1980; Schwartz & Reifler, 1988). Schwartz and Reifler found a significantly lower suicide rate among students compared to

non-students in their 1980 nationwide study, but they questioned the accuracy of suicide data obtained from colleges and universities (Schwartz, 1980; Schwartz & Reifler, 1980). Incomplete data on student suicide may be a significant confounding factor. Westefeld and Patillo (1987) found only 22% of the institutions in their nationwide survey had a standard record keeping procedure for suicides and suicide attempts.

Research has demonstrated that the same factors contribute to completed suicides, suicide attempts, and suicidal ideation and feelings. All of these suicidal behaviors can be viewed as various responses to some combination of the contributing factors (Wright, 1985). Firestone and Seiden (1990) conceptualized self-destructive behaviors as being on a continuum of intensity ranging from mild feelings of self-reproach with accompanying self-denial all the way to intense inner agitation, detailed suicidal plans and action. Thus, to investigate factors which contribute to suicide attempts and suicidal feelings is also to investigate factors which contribute to successful suicides.

When considering that 80% of successful college suicides are preceded by one or more attempts, and that attempts are preceded by a continuum of feelings, thoughts and plans, the issue of institutional preventive response to suicidality becomes crucial. This paper reflects a survey and evaluation of research reported since 1975 which focused on factors contributing to suicidality among college and university students. Research addressing preventive response to suicidality is also reviewed and evaluated. These preventive measures are then discussed in light of their appropriate response to factors identified in the research as contributing to student suicidality. The research investigated was limited to the United States college and university population in order to avoid confounds due to cultural and educational differences (Domino & Leenaars, 1989; Domino, MacGregor & Hannah, 1988).

For the purposes of this paper, suicidality is defined as the continuum of feelings, thoughts, ideas and plans that contribute to attempts and successes at suicide. Research

reviewed in this paper includes surveys and group comparison studies. These studies were assessed for their empirical value to the issue of college student suicidality. For each study the methods of data comparison were noted and the tests of comparison were evaluated. The internal validity of each study was considered by addressing the compatibility of observations, the assignment of subjects to groups and the nature of treatments applied. An assessment was then made of possible threats to external validity so that generalization parameters could be determined.

Contributing Factors

Empirical studies on suicide among United States college and university students over the past 15 years have identified many factors which appear to contribute to student suicidality. Some of these studies have been multi-factor investigations which have attempted to assess the relative influence of various factors on suicidality. Factors associated with suicidality include feeling states of depression, helplessness and loneliness. Stress and lack of family relatedness have also been shown to contribute. At least one study demonstrated a negative relationship between religiosity and suicidal behavior (Minear & Brush, 1980). In her review of suicidal behavior in schools Garrison (1989) identified the most common correlates of suicidal behaviors among college students as depressive feelings, social and family problems, and poor problem-solving skills under high stress. Empirical studies, including surveys, which relate to specific feeling states, stress, and family factors will be addressed in this section. Multi-factor studies will then be described in more detail and evaluated. Findings from all of these studies will then be compared and summarized.

Feeling States

Research on suicidality has indicated that the feeling states of depression, hopelessness, helplessness and loneliness are significant contributing factors. The

contribution of hopelessness has not been investigated as a single factor but has been included in various multiple-factor studies.

Depression. Sherer (1985) investigated depression and suicidal ideation in a sample of 149 psychology students at a southeastern university. Thirty-three percent of his sample reported ideation in the past with 9.4% having thought of specific methods of suicide. There were no significant differences between men's and women's responses on these variables. Of that same sample, 11.4% were depressed at the time of the survey and 22% indicated they had needed help for depression at some time in the past. Sherer did not investigate relationships between depression and suicidal ideation within subjects.

McDermott, Hawkins, Littlefield, and Murray (1989) examined correlations between depression and health-related behaviors such as suicidal ideation in their study among students at a large midwestern university. They used the same instrument as Sherer (1985) did to measure symptoms of depression, along with a health scale they developed for their study. Significant results included a .38 correlation between depression and thoughts of suicide. The behavior most highly correlated with depression was thought of self-injury ($r = .57$). Another behavior highly correlated with depression was the inability to make decisions ($r = .47$). An earlier study by Boor (1976) suggested a correlation between suicidality and indecisiveness as it relates to helplessness.

Helplessness. Helplessness can be conceptualized as a feeling of lack of internal control and is associated with feelings of powerlessness, lack of resources and dependency. Helplessness is often assessed by locus of control measures where a high score for external locus of control is used as a measure of helplessness (Strang & Orlofsky, 1990; Teicher & Jacobs, 1966, 1967). In his 1976 longitudinal study, Boor investigated the relationship between national suicide rates and mean scores on a locus of control measure given to 831 college students from two southcentral institutions. Boor postulated a positive correlation between annual variations in the United States suicide rates for the 15

to 24 year-old age group and mean score variations on students' locus of control scores for the same period. He compared the annual variations in suicide rates for the years 1966 through 1973 with mean score variations on a locus of control measure administered to college student samples during the same years. The investigator found a significant positive correlation between external locus of control score variations and national suicide rate variations for the 15 to 24-year-old age group (r = .93). Reasons for this correlation were not investigated in his study although he suggests environmental factors such as the Vietnam war as a cause. A replication of this study with current suicide rates is needed to generalize these results over time.

Loneliness. Diamant and Windholz (1981) researched loneliness among college students in a series of studies. One of these studies investigated the relationship between depression, loneliness and potential suicide. The investigators postulated that depression and loneliness would be positively related to suicide potential, and that depression would have a greater relationship with suicide than would loneliness. A sample of 63 subjects from a southeastern university was administered a loneliness scale and an index of suicide potential. The hypotheses were supported by significant correlations of .81 between depression and suicide mean scores, and .68 between loneliness and suicide mean scores. Results of this study demonstrated a relationship between loneliness, depression and suicide potential. This relationship needs to be investigated in different student populations and with other measures of suicidality.

Stress

A study to discover relationships between suicidal thoughts and stress among college students was developed by Carson and Johnson (1985). Subjects for this study were 218 undergraduate students from two southeastern universities who were enrolled in social science courses. The measures used to assess aspects of students' stress included a modification of a social readjustment scale and a scale developed by the experimenters to

identify symptoms of stressful life events. Suicidality was determined by the subjects' response to whether or not they had ever thought seriously about committing suicide. Significant findings indicated that students with suicidal thoughts reported experiencing significantly more stress symptoms that those without suicidal thoughts. Suicidal students had not experienced more stressful life events than non-suicidal subjects, but had received significantly less help on how to deal with emotions and problems. However, these results are not dependable. The reliability of the instruments is questionable, and the parameters of the variables were not clearly defined. A more tightly constructed study assessing the relationship between suicidality and the student's ability to deal with stressful events is needed.

Religiosity

In a study designed to investigate how beliefs and values relate to suicidal thoughts and behaviors, Minear and Brush (1980) found a significant relationship between students' religious beliefs and their own suicidal behavior. Participants in the study were 394 students from four New England institutions. The institutions included private and public colleges, a hospital nursing school and a Catholic seminary. As part of this study, religiosity was assessed on four variables: religious affiliation, attachment to religion, frequency of participation in religious services and belief in an afterlife. Suicidal behavior was assessed by students' response to three levels: whether or not they had considered suicide, threatened suicide or attempted suicide. Significant results from this study indicated students who received high scores on the suicide scales tended to be less religious on all four variables. Minear and Brush concluded that when life became too difficult, non-religious students were more likely to consider suicide as an option than were religious students. This study cannot be generalized beyond the sample due to differences in subject recruitment which may have resulted in an over-representation of religious students.

Results appear to indicate a relationship between religion and suicide which would be valuable to investigate in further research in both sectarian and non-sectarian institutions.

Family Factors

Hendin (1975a, 1975b) reported on the assessment processes and therapy used over a five year period with 50 college students who had made suicide attempts. He found that a significantly high proportion of these seriously suicidal students had lost a parent . He suggested the crucial factor in this correlation is not physical death, but the quality of feeling that exists between the student and parents. When an emotional dying has been enacted in the parent-child relationship, Hendin stated, the physical death of the parent perpetuates death as a way of life for the child. He wrote: "Suicide was a way of life for the many students I saw who continually killed their enthusiasm, their hope, their freedom, and finally attempted to kill themselves" (Hendin, 1975b, p. 217).

In a study designed to identify variables related to serious suicidality among college students, Wright, Snodgrass, and Emmons (1984) separated 1,768 students at a southcentral university into a suicidal thoughts group and a contrast group on the basis of responses to survey questions about their suicidality. One purpose of this study was to determine the relationship between reported suicidal thoughts and variables related to family problems dating back to childhood and adolescence. Significant differences between the two groups were found on variables related to abuse by a parent, inter-generational conflicts, parental conflicts, parental suicidality, parental loss, and poor relationships with parents. Parental anger, physical abuse by a parent, and many conflicts with parents were the three variables which best discriminated between the two groups. Similar results were obtained by Wright (1985) in a later study of high school and college students' suicidality and its relationship to family dysfunction. These results are not dependable due to the uncertain reliability and validity of the questionnaire. These important correlations between

family relationships and suicidal behavior which have been found should be investigated in further research.

Multiple Factor Studies

Multiple factor studies have sought to determine the roles of various contributing factors as they act in combination. The influences and interactions of feeling states, stress, relationship factors and cognitive processing have been investigated in attempts to develop more predictive models for addressing suicidality.

Social desirability. Cole (1988) examined the relationships between social desirability, hopelessness, depression and suicidality. While he did not specifically define the term "social desirability", it appears from the context of his article that this concept refers to the need of a subject to respond to the environment in a socially desirable manner. His first hypothesis was that the relationship between hopelessness and suicidality depends on the population under investigation. Secondly, he hypothesized that the choice of the social desirability assessment instrument could make a difference in the results of an experiment.

Two hundred fifty-five subjects at a midwestern university were involved in Cole's study. About half were volunteers from undergraduate psychology classes and the remaining 125 were students seeking therapy at the university counseling clinic. All subjects were given eight questionnaires at one sitting: three depression inventories, three social desirability measures and two hopelessness assessments. The two groups were assessed equally throughout the year: clinic subjects between their first and third appointments, psychology students at the same pace. Assessments were randomized to avoid fatigue effects. Correlation matrices were computed for each group and results showed significant homogeneity of covariance. Linear Structural Equation Analyses (LISREL) were used to determine factor loadings, factor correlations and standard errors for the measurement and structural models.

Results from Cole's study supported the first hypothesis. Hopelessness did relate to suicidality for the seeking-treatment group after controlling for depression and social desirability, but there was no significant relationship between these two factors in the non-treatment group. Hypothesis two was also supported by the results of this study. The choice of the social desirability measure was demonstrated to be critical. One social desirability assessment, Edwards' Social Desirability Scale, was overly sensitive to depression, especially in the seeking-treatment group. Another, Marlowe-Crowne Social Desirability Scale, did not have this problem although its lower loading on the social desirability factor indicated it is not a very powerful measure of social desirability. In the non-treatment group social desirability did account for the correlation between hopelessness and suicidality. For the treatment group, however, the Marlowe-Crowne scale did not account for the hopelessness-social desirability relation. Hopelessness, then, did relate to suicidality in the clinical sample once depression and social desirability were controlled. Among non-clients this relationship was not significant. Results of this study implied that self-reported hopelessness in non-clinical samples has a very weak relationship to suicidality. Results also demonstrated that different self-report measures of the social desirability factor will produce different results and do not measure the factor in the same way or with equivalent power. Cole concluded, "Reliance on single measures to estimate relations between psychological constructs in single samples can lead to puzzling, contradictory results" (Cole, 1988, p. 135).

This study was well controlled because the observations were comparable and the volunteer groups were recruited at the same rates and times. Treatment was the same for all subjects and the order of assessment was randomized. Replication of this study with other university samples would assure generalization to the national population of undergraduate university students.

Family problems and feeling states. A study to examine students' reasons for suicide threats and attempts and the institution's involvement in the incidents was undertaken by J. Bernard and M. Bernard (1982). Subjects were students in a southeastern university who volunteered to participate in a research project. Eight hundred thirty-eight students completed a questionnaire assessing reasons for suicidality and feeling states preceding the incidents. An asset of this study was that by defining the terms "suicide attempt" and "suicide threat" the examiners provided a strong basis of comparison for the data. A student's suicide threat was defined as "having actually told someone you were considering taking your own life" and an attempt was defined as "actually having tried to take your own life" (J. Bernard & M. Bernard , 1982, p. 40).

Factors assessed in this study included reasons for suicidal behavior, feeling states which precipitated the events, the student's perceptions regarding withdrawal from school after the event, staff involvement in the event and preventive measures which could be taken by the institution. Subjects were assigned to two groups on the basis of their responses to initial questions regarding their suicidal behavior. One group (20% of the sample) reported threats or attempts of suicide and completed the questionnaire on the basis of their own experience. The second group, a comparison group, was instructed to complete the questionnaire as though they had expressed a threat of suicide or made an attempt.

Social problems and family problems accounted for 75% of the suicidal behavior reported by both groups. Academic pressures were seen as significantly less important by the suicidal group compared to the non-suicidal group. The suicidal sample was divided into two groups, pre-college suicidality and in-college suicidality. There were no significant differences between the pre-suicidal feeling states reported by the in-college and the pre-college groups. Both groups identified depression/sadness, loneliness/isolation and anger as factors which preceded their suicidality.

J. Bernard and M. Bernard (1982) pointed out that their study indicated non-suicidal groups tend to attribute suicidality to academic pressures significantly more than do suicidal groups. They suggested it may be erroneous to assume that college-age suicidality is due primarily to the student status of the individual; it may be more related to family/social factors which become overwhelming in the college environment.

In a wider range study Westefeld and Furr (1987) assessed suicidality on college campuses as reported by students from three different institutions located in three different geographical areas of the United States: a midwestern university with a 50% on-campus resident population, a southeastern university with 70% commuter population, and a small, private northeastern college with a predominantly female, residential population. The study was designed to discover incidences, causes and possible solutions to suicidality and depression experienced by the subjects. The 967 randomly selected students responded to questions in four categories: (a) depression experienced since entering college and subjective reasons for the depression, (b) past thoughts of suicide and/or attempts and reasons selected from a list, (c) counseling sought, if any, and experience of its helpfulness, and (d) opinions on how the institution could address the problem more effectively. The list of possible reasons for suicidality included money problems, parental problems, grade problems, loneliness, hopelessness, helplessness, and relationship problems with peers. Subjects were also asked to list other reasons for their suicidality and were also given a "don't know" choice. Frequencies of the various responses were determined for all four of these categories.

Suicidal thoughts were attributed by subjects to factors of loneliness (67% of the group), hopelessness (38%), general depression (32%), relationship problems (30%), helplessness (27%), grade problems (24%), parental problems (22%) and money problems (14%). Suicide attempters attributed their behavior to loneliness (67%), hopelessness

(55%), parental problems (41%), relationship problems (41%), general depression (41%), grade problems (31%), helplessness (31%) and money problems (19%).

Chi square analyses compared suicide attempters (4% of the total sample) with non-attempters across the possible reasons listed in the survey. Two categories of non-attempters were compared: those who had experienced depression since entering college (81% of the sample) and those who had experienced suicidal thoughts and feelings at any time (32%). Results of these comparisons indicated some significant differences between attempters and suicidal non-attempters: Loneliness, hopelessness, and problems with parents were identified as more significant factors by attempters than by suicidal non-attempters. The comparison between the two non-attempter groups (suicidal versus depressed) resulted in significant differences on the hopelessness, helplessness and problem with parents factors, however these results do not appear valid. The data for the depression group were time-limited (depression since entering college) while the suicidal data reflected suicidality over subjects' lifetime. Chi-square analyses also revealed significant differences between suicide attempters and the remaining sample on three factors: Attempters were more likely to have experienced depression since entering college, to have sought counseling, and to view depression as a serious problem on campus.

Comparisons between the three institutions were made, and significant differences were found on several variables. Students at the small college were more likely than students from the other institutions to have experienced depression since entering college, to have thought about suicide, and to have made an attempt. These same students were more likely to have seen parental problems, loneliness, hopelessness, helplessness and relationship problems as factors in their depression. Students at the midwestern university were more likely to identify grades as contributing to depression. The small-college students were more likely to view loneliness as a factor in their suicidality, while midwestern university students were more likely to see money problems as a factor.

This Westefeld and Furr (1987) study was enhanced by the diversity of institutions and locations represented in the sample. The comparisons between suicide attempters and suicidal non-attempters have good validity. Results of analyses between the depressed group and the suicidal groups may not be valid because subjects were assessed from different time frames and the contributing factors are not equivalent. The factor list for the depressed sample was subjectively determined and the factor list for the suicidal sample was objectively stated in the questionnaire. The two factor lists, although similar in terminology, cannot be assumed to be equivalent in meaning.

Comparisons between the institutions cannot be generalized because of the varying influences of institutional characteristics and geographic factors on the results. Further studies are needed to determine relationships between student suicidality and the size, type and geographic location of the institutions.

Roles of cognitive rigidity and life stress. An etiological model for suicidal behavior was proposed by Clum, Patsiokas and Luscomb (1979) suggesting that life stress and cognitive rigidity interact to increase the probability of suicidality. Schotte and Clum (1982) explored this model using a sample of psychology undergraduates at an eastern university. Their hypotheses were that suicidal subjects would have higher levels of depression, negative life stress and hopelessness than non-suicidal subjects, that suicidal subjects would demonstrate fewer problem-solving skills and less cognitive flexibility, and that suicidal intent would most accurately be predicted by hopelessness.

Volunteer subjects ($N = 175$) were administered a battery of assessment measures. On the basis of test results subjects were separated into a suicide ideator group and a non-ideator group, and analyses were done to evaluate the relative contributions of the dependent variables to the degree of suicidality. In assessing differences between ideators as a group and non-ideators, ANOVA analyses found significantly higher scores for ideators over non-ideators on three variables: depression, hopelessness and negative life

stress in the previous six months. No sex differences were found on the suicidality measure, however women reported significantly higher levels of depression than did men.

Ideators were separated into low, moderate and high sub-groups and compared along with non-ideators in a series of paired comparisons to further examine the group differences. Group differences on the life stress variable were accounted for by significant differences between high ideators and non-ideators. Depression was greater in high ideators than in moderate ideators, and greater in moderate ideators than in low and non-ideators. Hopelessness was significantly greater in high compared to moderate ideator groups, in moderate versus low ideators, and in low versus non-ideators.

Scores on the life stress and cognitive rigidity measures were used to divide the subjects into four groups: poor problem solvers under high stress, poor problem solvers under low stress, good problem solvers under high stress and good problems solvers under low stress. Orthogonal contrasts showed that poor problem solvers under high stress were significantly higher in suicidal ideation than the other three groups combined. To determine the best predictors of suicide intent, a step-wise multiple regression was employed. In the sample as a whole, depression accounted for 37% of the variance and hopelessness an additional 6%. Further regression analyses revealed that as suicidality increases hopelessness becomes an increasingly salient factor relative to depression.

This Schotte and Clum (1982) study found no significant differences between ideators and non-ideators on the measure of cognitive rigidity. The experimenters concluded that the role of cognitive rigidity (poor problem solving) is mediational. In conjunction with negative life stress, poor problem solving can lead to feelings of hopelessness which then can lead to the development of suicidality. Hopelessness as a predictive factor appears to gain in importance at higher levels of suicidality, while depression is relatively more important at lower levels.

This study appears to be internally and externally valid and analyses were appropriate to the data. Generalization beyond the time and place in which this study was done is not appropriate, however, due to the small sample and narrow population segment used. Replication of this study with larger samples, a broader spectrum of college majors, and in a variety of geographic locations would further demonstrate the usefulness of this model.

Interaction of helplessness, hopelessness and interpersonal attachments. A study conducted by Strang and Orlofsky (1990) focused on current suicidal ideation among college students under 21 years of age. Strang and Orlofsky examined the interaction of the three factors proposed by Teicher and Jacobs (1966, 1967) which put a youth at risk for suicide. These three factors are (a) the experiential absence or disruption of interpersonal attachments, (b) a sense of personal helplessness to resolve interpersonal issues (reflected by external locus of control), and (c) a sense of hopelessness regarding the future. Students from two non-residential midwest universities (N = 191)were used as the sample in this study. Based on results of Schotte and Clum's (1982) measure of current suicidal ideation , and a questionnaire assessing suicides and attempts by close friends and family members, the student sample was divided into three groups of suicidal severity: non-ideators, low ideators, and moderate-high ideators. All subjects were given three measures to assess helplessness (locus of control), hopelessness and interpersonal attachment. A 2x3 ANOVA was used to analyze the scores on the three assessment measures using gender and degree of suicidality as the independent variables.

Significantly lower mean differences were found in the interpersonal attachment scores of low ideators compared to non-ideators. Significantly lower differences were also found on this variable between moderate-high ideators compared to non-ideators and low ideators. Moderate-high ideators endorsed the helpless view that events are controlled by external forces significantly more than non-ideators and low ideators. They also reported

feeling significantly less able to affect their families than the other two groups, and less able to effect achievement through their own efforts than non-ideators. Results of a principal components factor analysis on the hopelessness scale revealed that moderate-high ideators expressed significantly more hopelessness for the future and had significantly higher scores on pessimism and lack of motivation than did low and non-ideators.

Multivariate analyses were used to determine the relative strength of each factor in predisposing subjects to suicidal ideation, and also to determine the way in which the three factors combined or interacted. Two hypotheses were tested by these analyses: (a) interpersonal attachment, external locus of control (helplessness) and hopelessness are independently additive upon the probability of suicidal ideation, and (b) these three factors interact so that all three must be present to increase the probability of suicidal ideation. Results from these analyses indicated that hopelessness scores accounted for more variance than either interpersonal attachment or helplessness scores in discriminating moderate-high, low and non-ideators. Attachment scores contributed an additional 4.3% discriminative power above hopelessness scores by themselves, and helplessness scores did not produce any further significant discrimination. Neither hypothesis was verified by these analyses although attachment did add significantly to the discriminative power of hopelessness. The hypothesis that attachment, hopelessness and helplessness are all necessary in order to produce heightened suicidality was not substantiated.

Strang and Orlofsky's (1990) study provided other information regarding suicidality among this sample. Their findings indicated that a previous suicide attempt was not significantly associated with an increase in the prevalence of current suicidality. They also found that the previous suicide of a friend or relative was not significantly associated with current rates of suicidality. High levels of hopelessness were significantly associated with suicidality only after the ideation reached moderate severity.

The experimenters noted that while most of the subjects were from intact families, the subscales of the "attachment to parents" factor provided the most differentiation between the three ideator groups. They concluded that this degree of differentiation strongly supports Teicher and Jacobs' (1966, 1967) hypothesis that the significant factor in suicidality is not parent-child separation per se, but the subject's experience of parental attachment. They also noted that while insecure attachment to parents is associated with low suicide ideators, it was severe insecurity with parents plus insecure attachment with peers that produced moderate-high ideation. The only significant gender-based difference was found on the attachment to parents factor. Analysis of the gender by group interaction suggested that insecure attachment to parents may be a more important factor in suicidality of females than of males.

Data in the Strang and Orlofsky (1990) study were appropriately analyzed with ANOVA, and multivariate analyses provided the necessary information on which to evaluate the relative strengths and interaction of the factors proposed in Teicher and Jacobs' (1966, 1967) model. Information about the recruitment and assignment of subjects was not given in the article, nor was the assessment process described. Random assignment of subjects and comparability of observations therefore cannot be assured. The sample used for this study was from a non-residential university population. Since Westefeld and Furr (1987) found differences between residential and commuter populations on suicidality variables, generalization of these results beyond the midwestern commuter university population is not warranted.

Interactions of cognitive, social, and emotional factors with stress. Bonner and Rich have published three studies exploring their interactional model for predicting suicidality (Bonner & Rich,1987, 1988; Rich & Bonner, 1987). They conceptualize the suicidality process as a continuum of potentiality including ideations, contemplations, threats, attempts, and completions occurring in a context of personological and

environmental factors. Following the research by Schotte and Clum (1982), they suggested a model beginning with environmental stress and cognitive distortions which produce depression and associated low suicidal ideation. At this point, they suggested, loneliness and social support become critical. Persons who have enough social support will be able to cope with their suicidality and will not move into the hopelessness which is predictive of higher suicidality (Schotte & Clum, 1982). If there are enough important beliefs and adaptive reasons for living, a person's suicidality will not progress to the point of overt attempts at suicide.

In their first study, Bonner and Rich (1987) hypothesized that in response to high environmental stress, subjects who scored high in cognitive distortions and rigidity, low in their experience of social support, and low in adaptive reasons for living would score highest on a measure of past and present suicidality. They administered 10 self-report measures to a sample of 158 general psychology students recruited from a pool in an eastern university. Subjects were divided into four groups on the basis of their scores on the suicidality measure: non-suicidal, low suicidality, moderate suicidality and high suicidality/attempts. Correlations between the degree of suicidality and the predictor variables were all significant. Because of the high intercorrelation of the variables a factor analysis was done to determine their basic structure. Four factors emerged: (a) Social/Emotional Alienation, composed of loneliness, depression, hopelessness, and perceived interpersonal problem solving dysfunction, (b) Cognitive Distortions, comprising cognitive rigidity and irrational beliefs, (c) Deficient Adaptive Resources, including deficient reasons for living and lack of intrapersonal and interpersonal cohesiveness, and (d) Life Stress.

A sequential-regression procedure was applied to the data to discover the independent contributions of these four factors to the various degrees of past/present suicidal behavior (low ideation, moderate ideation and high ideation with plans). Results

indicated Social/Emotional Alienation was a stable factor at all levels of suicidality. Cognitive Distortions became salient at moderate suicidality levels and remained a relatively stable predictor through higher levels. Deficient Adaptive Resources were predictive at low ideation levels and at high ideation/attempt levels. The Life Stress factor was not a significant predictor of suicidal behavior at any level. Bonner and Rich (1987) concluded that the combination of Deficient Adaptive Resources, Social/Emotional Alienation and Cognitive Distortions accurately predicted the most severe suicidality scores, but this was a tentative conclusion due to the very small number of subjects in the severely suicidal category.

Results of this Bonner and Rich study generally supported the proposed model. However, they noted several limitations. The suicidality questionnaire used primarily measures past suicidality, so present suicidality may have been under-assessed. If this is true, the contributing factors to current suicidality, such as stress, could not be adequately analyzed. The data from subjects were biased toward non-ideation and lower ideation; there were only five subjects who reported a suicide attempt. The experimenters pointed out that their multiple regression analysis assumed a linear model of prediction between the variables and the suicidal behavior; there may be a fluid, interactional process operating between factors. They noted the small sample size and stressed the need for replication and validation across a variety of populations.

In a follow up study Rich and Bonner (1987) focused on factors predictive of current and future suicidality among college students by examining two hypotheses. They suggested that the combination of negative life stress and vulnerability factors would best explain current suicidality. They also suggested that present suicidal ideation and hopelessness would be the best indicators of self-predicted future suicidality.

Subjects in this study were 202 volunteers from a pool of psychology students in an eastern university. Self-report assessment measures were similar to those of the

previous study with the exception of the scales for suicidality which assessed the frequency and intensity of current suicidal thinking and the subjects' predictions of their probability of future suicide attempts. Subjects were separated into four groups according to their scores on the suicidality measures: no ideation, low-intent ideation, moderate-intent ideation and high-intent ideation. Correlations between the degree of current suicidality and the predictor variables were all significant.

Multiple-regression analyses applied to the data revealed that a combination of depression, few reasons for living, loneliness and negative life stress best accounted for current suicidality. A combination of current suicidality, hopelessness, few reasons for living and dysfunctional cognitions best accounted for self-predicted future suicidality. Rich and Bonner (1987) concluded that these findings were consistent with their previous study and provided support for their proposed model. They suggested that cognitive distortions and rigidity may be more important factors in maintaining suicidality than in initiating it. They also emphasized that future suicidality can not be assessed, only the subject's self-prediction of future suicidality. In this study, as in the previous one, predictors could account for only about 33% of the variance in suicidal ideation, suggesting the presence of other factors to be considered.

In both of the previous studies, findings suggested future research should include longitudinal studies to determine the nature of interactions over time. Previous findings also suggested that a linear model for analyzing the relationships between variables might not be a valid assumption. In a succeeding study, Bonner and Rich (1988) investigated their model by addressing ongoing interactions of social, emotional and cognitive processes in stressful situations over time. One hypothesis they tested was that the vulnerability factors of social/emotional alienation, cognitive distortion and deficient adaptive resources are predictive of suicidality over time. A second hypothesis stated that these vulnerability factors interact with situational and cumulative negative life stress to predict suicidality. A

major purpose of this study, although not a formal hypothesis, was to determine whether these vulnerability factors would interact with each other or compensate for each other in predicting suicidality.

One hundred eighty-six subjects were recruited from general psychology students at an eastern university. Assessment included measures to determine current suicidality, negative life stress, midterm stress and vulnerability measures used in the two previous studies to assess loneliness, depression, cognitive distortions and adaptive resources for living. At the beginning of the spring semester (Time 1) subjects were given self-administered measures of vulnerability including social/emotional alienation, cognitive distortions and adaptive resources. Exactly six weeks later to the hour (Time 2) they were administered measures of midterm stress, cumulative negative life stress and current suicide ideation in addition to the same measures of vulnerability.

Relationships between predictor variables and suicidality were all significant as in the previous studies. Multiple regression analyses were performed and no linear combination was found to adequately predict the predictor variances. Factor analysis revealed three independent factors: social/emotional alienation, adaptive resources for living, and life stress. Irrational cognitions loaded on the social/emotional alienation factor. When product-moment correlations were computed among the Time 1 and Time 2 variables a very acceptable degree of measurement reliability was found. Further multiple-regression analyses were conducted to determine the linear versus interactive quality of the factors.

Hypothesis one was not totally supported by this study. The combined vulnerability factors of social/emotional alienation and deficient reasons for living assessed at Time 1 were accurate predictors of suicidality at Time 2. Irrational cognitions, however, did not contribute to this prediction and do not appear to be a separate factor. The second hypothesis also was not totally supported by the study. Suicidality was a function of the combination of vulnerability at Time 1 and midterm stress as well as negative life stress at

Time 2, but not of the interaction of these variables. Neither the interaction of vulnerability with midterm stress nor the interaction of vulnerability with negative life stress accounted for suicidality at Time 2 significantly beyond the main effects. Vulnerability factors were the major predictors of suicidality and any or all of them could increase the risk of suicide.

Bonner and Rich (1988) suggested on the basis of these results that social/emotional alienation, deficient reasons for living, situational stress, and cumulative negative life stress should be seen as risk factors rather than vulnerability factors in the development of suicidality. They pointed out that in this study as well as in previous studies the predictor factors accounted for only a small percentage of the variance in suicidality, 25% in this case.

The methodology of this study posed some threats to validity which were not specifically addressed by the investigators. How the assessment measures were administered to subjects at Time 1 and Time 2 was not clarified in the article. The validity of the assessment results when readministered after a six week interval was not addressed by the investigators. Bonner and Rich (1988) cautioned about generalizing these results to other populations. Replication of this study with other population samples will be a valuable step toward developing a predictive model for determining suicide risk among college and university students.

Summary of Contributing Factors

Although most of these studies cannot be generalized to the entire United States college and university student population, significant results have been found in the samples which are indicative of factors contributing to suicidality. Depression, hopelessness, helplessness and loneliness were usually present in combination in the suicidal samples studied, with hopelessness appearing to be the best predictor of more lethal behavior. Stress was found to contribute to suicidality in that students who were suicidal had less problem solving ability to resolve stress. There is indication that lack of a

strong religious affiliation may contribute to students' suicidal behavior. Cognitive distortions were found to increase suicidality when ideation was already at a moderate level. Family conflicts and abuse dating back to childhood were found to be significant predisposers to suicidality, as was lack of family relatedness. Social and emotional alienation from family and peers were contributing factors at all levels of suicidality. Preventive response to student suicidality will need to address these factors in order to be effective.

Bonner and Rich (1988) pointed out that "once the suicidal process has begun, it is difficult to untangle cause from effect. Is social alienation and withdrawal, for example, the cause of high-intent suicide ideation, the result of it, or both?" (p. 256). Further research needs to determine the roles of other factors such as addictions and compulsions, to address personal vulnerability differences, and to identify more clearly how the various factors interact in the suicidal process.

Preventive Response

Responding to a potential situation in a preventive manner necessitates addressing several areas. Awareness of the factors contributing to the problem, understanding of appropriate response possibilities, and knowledge of effective response sources are all crucial for preventive response to suicidality. The literature on college student suicide prevention addresses the issue in general and also specific preventive measures. This section will review general issues and describe preventive responses which have been studied in empirical modalities.

General Prevention

Prevention of any event or circumstance in the mental health field has been conceptualized by Gerald Caplan (1964) as occurring on three levels: primary, secondary and tertiary. Primary prevention in mental health has as its goal the reduction of incidences

or new cases of a psychological disorder in a population. It is not focused on a specific person or case but seeks to reduce the risk of the event for the whole population. In the case of college student suicidality, primary prevention would involve implementing programs and structures to address contributing factors before they result in suicidality. Secondary prevention is focused on decreasing the number and severity of cases which have already occurred. To apply this level of prevention to college student suicidality would be to provide resources for suicidal students aimed at addressing their problems before they became more severe. Tertiary prevention is concerned with reducing impairment that might result from the disorder. College student suicidality is addressed at this level by intervention when serious threats, attempts and successful suicides occur. Conyne's (1983) concern was that mental health prevention for college and university populations be focused on the primary level with goals of reducing incidences of dysfunction and promoting emotional health. He described primary prevention as being proactive and population-based in that it is actively initiating and targets large groups rather than individuals. Prevention should be concerned with anticipating the potentiality of a disorder in a susceptible population and introducing programs which will prevent its occurrence.

Following Conyne's (1983) preventive conceptualization, response to suicidality at a primary level requires recognition of the problem and its components, competence in implementing interventions which address the multiple components of suicidal behavior, and the presentation of these interventions to the population in a way that produces a positive response. College administrators do not always recognize the extent of suicidality on their own campus. A study by Hendrickson and Cameron (1975) explored the gap between published facts about college suicide and an administrator's perception of suicidality at his or her campus. A random sample of deans from 65 California college level institutions was surveyed by means of a questionnaire. Results of this study

supported the hypothesis that a lower percentage of student deans perceived suicidality a problem on their campus than perceived it as a national problem. Data for this study were based on information for the years 1968-1973 and should not be generalized to current samples or populations without caution. A replication of this study is needed to determine if college deans are still underestimating the suicidality problem on their own campuses.

A study by Holmes and Howard (1980) addressed the ability of professionals with at least two years of experience to recognize suicidality. Six groups of 30 subjects (physicians, psychiatrists, psychologists, social workers, ministers and a control group of lower division college students) were given a multiple choice questionnaire assessing their knowledge of signs of suicide potential. Significant results from ANOVA and post-hoc Tukey analyses indicated that physicians and psychiatrists earned higher scores than other groups. Psychologists and then social workers ranked above ministers, and there was no significant difference between the scores of ministers and students. When compared by years of experience, professionals with over 15 years of experience scored significantly higher than others. There was no significant difference between the scores of the group with 2 to 5 years of experience and the group with 6 to 10 years of experience. Implications of this study suggest that the most accurate assessment of suicidality in the university context will be through experienced health and psychological service professionals.

Leighton Whitaker, the director of a college psychological service, viewed the college mental health service as an effective resource for reversing suicidality among students (Whitaker, 1986). He believed, on the basis of his experience as a therapist, that destructive attitudes on the part of the student population can deter the suicidal student from therapy. Citing several of these attitudes, he suggested that therapy is often viewed by students as the last resort for people who are weak and cannot cope on their own. He believed students can be indifferent to another's suicidality, assuming that if a person wants

to commit suicide they cannot be stopped. Hostile feelings toward a suicidal person, he suggested, may nonverbally express the view that he or she is all messed up and would be better off dead. Suicidality is often assumed by others to be manipulative and therefore ignored.

Whitaker (1986) regarded therapy as a major preventive response to suicide in the college environment when it is viewed as a helpful developmental process and has a positive social acceptance among students. He believed this kind of attitude toward therapeutic services is fostered by a counseling center which has good campus visibility, a favorable reputation and close working relationships with campus groups. A trained staff of resident assistants in the dormitories is also essential, he claimed, for appropriate referrals to therapy and for adequate response to students with problems. Whitaker's theoretical position on suicide prevention is supported by empirical studies which demonstrate the significance of peer response, administrative structures and training programs.

Peer Responses

A study which pointed out the importance of primary prevention was conducted with 57 students at an eastern commuter college by Mishara (1982). The goals of this study were to help clarify students' personal experiences with suicidality, explore the effects of peer responses, and use this information to suggest a preventive model for suicidality. He replicated his study by using a second sample of 83 students from the same college. His subjects were those who returned completed questionnaires distributed in psychology classes for Sample 1 and in various other classes for Sample 2. Subjects were asked questions about their friends who had considered or attempted suicide and about their reactions to these friends. They were also asked about their own suicidality and how others reacted to their communications of this.

Analyses of the results for both samples was done by a multivariate log-linear method (MULTIQUAL) which allows for fitting a model to explain data involving several qualitative factors. The same model fit the data from both samples. A four-dimensional classification of each suicidal verbalization was generated by the analysis with dichotomous categories for each: Reactions to the verbalization (open/closed), Reasons for suicidality (loss/other), Subjects of the suicidality (others' reaction to self/self's reaction to others), and Outcomes (helpful/not helpful).

Significant results indicated a complex interaction of Reasons, Reactions and Outcome with no interaction of the Subject variable. Open reactions were more likely to result in a helpful outcome, but those whose suicidality was related to a loss were less likely to experience help regardless of the nature of the reaction. Thirty percent of the suicidal subjects cited a loss as a primary factor. Other significant results indicated that suicidality often results in feelings people try to avoid and therefore respond to in a closed manner. A majority of the two samples (59%) knew someone who had attempted suicide. Thirty-nine percent had talked with a peer who was contemplating suicide and most subjects had talked with someone who verbalized suicidal thoughts and feelings. Only 13 of the total subjects had no suicidal experiences to report.

Two avenues of prevention were suggested by Mishara (1982) on the basis of his study. At a primary preventive level, suicidality may be reduced by increasing the supportive systems available to college students. The loss of a significant person might have less impact if the student was already involved in other socially satisfying networks. This study indicated college students have extensive contact with suicidality, either their own experiences or experiences shared with them by others. Mishara suggested an important secondary prevention would be through educating peer level persons to recognize and respond to suicidal expressions. He saw this kind of training as a way to de-stigmatize

suicidality and make possible more open and appropriate responses to expressions and feelings of suicide.

Generalization of the results of this study are limited to the sample due primarily to the method of obtaining subjects, as Mishara pointed out. There was a only a 56% return rate for the questionnaires. A regression to the mean is likely in that those who did not respond may have been those who had no experiences to report. It should also be noted that in this study, as in all studies which access subjects' subjective experiences, the results reflect only the students' perception of the events and situations solicited by the questionnaire.

Peer counselors who are trained to respond to suicidal students in crisis are an example of tertiary prevention. Peer counselors, especially if they are volunteers, are often persons who have also experienced suicidal feelings and behaviors. R. Wellman and M. Wellman (1988) surveyed students in an eastern urban college. They found those who had attempted or threatened suicide at some time in their lives were more likely to be in close contact with other suicidal students. In their study assessing attitudes toward suicide, Domino, Gibson, Poling, and Westlake (1980) surveyed students in a variety of universities and colleges from all geographic areas of the United States. One of their conclusions was that students in general viewed suicide attempts as a plea for assistance or attention, but not a serious effort to end one's life. Domino and his associates saw this as a dangerous perception which could result in the disregard of a peer's danger. Limbacher and Domino (1986) compared the attitudes toward suicide of individuals whose histories included suicidality and those whose histories did not. Results of this study in a western university indicated the most understanding helpers were those who had been suicidal themselves at some time in the past.

Tucker and Cantor (1975) conducted an investigative study to determine if volunteer peer counselors in suicidal prevention situations are enough different from the

client to be helpful. Their focus was to determine if peer counselors share important personality characteristics, family background and suicidal ideation with a group of suicide attempters. Their article identified three groups of 18-25 year-old females from two eastern universities. A group of 20 suicide attempters and a control group of 50 high ideators and 50 low ideators were selected from a random sample at one university; and 20 volunteer peer counselors were selected from another university's peer counseling organization. Subjects were given a questionnaire to assess personality and status factors and another to determine their scores on five characteristics: affiliation, succorance, nurturance, endurance and aggression.

ANOVA and Scheffe tests were used to analyze the data from the questionnaire on the five characteristics. Personality and status factors from the other questionnaire were compared using Chi square analyses. Significant results indicated that peer counselors strongly resembled the attempters in their needs but dealt with those needs in different, more adaptive ways. A significantly greater number of counselors had stable families and had fathers who were not absent from the home. Tucker and Cantor (1975) concluded that peer counselors for suicidal students may be uniquely qualified to identify with the needs of their counselees and provide alternative ways of dealing with those needs. They suggest further investigation into the area of family stability as a source of adaptive living skills which prevent suicide. A replication of this study with male subjects would be a valuable area of research.

The assessment measures used in this study were not sufficiently described to assure that they measured distinctive variables. Groups did not appear to be well defined. Subjects were identified as belonging to three groups, all the analyses were done with four groups and the use of the control group was not made clear. Results of this study cannot be generalized but can be used as indicators for further investigation.

Administration Responses

In their study of depression and suicide among college students Westefeld and Furr (1987) surveyed college student samples from three different areas in regard to their experiences of depression and suicidality. This study has been described in a previous section of this present review. One portion of that study solicited students' opinions on what preventive responses they would suggest for their institution to implement. Only 15%, or 150 subjects of the sample, responded to this question with one or more suggestions. It is noteworthy, however, that most of these suggestions involved prevention at a primary level. Of those 150 subjects 35% saw the need to make the university community more aware of the problem, 20% suggested seminars, 17% suggested more understanding by faculty, 13% wanted more concern to be shown for students, and 13% suggested more activities be provided to bring people together. Responses more directly related to a therapeutic process included 15% who suggested more individual counseling, 9% suggested groups to help with specific stresses and 6% saw the need for education about the signs of depression. While these data are important reflections of the students' perceived needs in relation to the problem of suicidality, the small percentage of subjects who responded does not provide a strong statistical basis for generalization of these results. Further studies of students' needs would provide valuable resources for primary prevention programs.

Several studies have been done in the past 15 years that assess and evaluate the responses of various levels of college and university administrations when there are serious suicide threats and attempts. M. Bernard and J. Bernard (1980) conducted a nationwide survey of university and college counseling services to determine policies for dealing with seriously suicidal students. Their summary addressed ethical and legal issues such as whether the policies were in students' best interests and if they were in violation of federal law. Questionnaires were distributed to 109 institutions, and the 81% return reflected a cross-section of college counseling services in the United States. Many of the institutions

reported considering a wide range of responses to student suicidality. For the purposes of their study, the most drastic response considered was used for tabulation. No definition was provided for the terms "suicide threat" and "suicide attempt." Institutions applied their own parameters to these terms. Respondents to the survey indicated there was a diversity of administrators and officials who actually made the decisions in response to suicidality, and no similarities in decision-making patterns could be identified.

Information was categorized in three basic areas. The first category concerned the institutional policy on inquiry into previous psychiatric history as part of the admission policy. Forty percent of the respondents did inquire, and the majority of those reacted to the information either by inquiring further or by denying admission until the problem was proved to be resolved. For an incoming student who was a suicidal risk, counseling would be required or suggested, or admission would be denied until the risk had abated.

A second area of inquiry concerned institutional policy for responding to students who threaten or attempt suicide while enrolled. No official action would be taken by 17% of the respondents. Forty-seven percent would suggest professional help, living off campus or withdrawal from school. The remaining 36% would require the student to pursue one of those options. Students who refused to comply with the request or demand of the administration would be given a hearing by 23% of the institutions, withdrawn by 10%, parents or police would be called by 28%, and 9% would take steps to have the student hospitalized for psychiatric treatment.

In their discussion of ethical and legal issues, M. Bernard and J. Bernard (1980) pointed out that persons with emotional or mental illness are defined by federal law as handicapped and that suicidal behavior is recognized as a product of mental illness. They suggested that inquiry into a students past psychiatric treatment could be interpreted as a violation of federal law against discrimination in admission. They also cautioned that dismissal of a student for reasons other than academic incapacity must be subject to due

process and this includes being forewarned of the consequences of suicidal behavior (e.g., a statement in the student handbook).

In a later study on factors contributing to suicidality among college students (J. Bernard & M. Bernard , 1982), only one suicidal student out of 75 reported administration involvement in the incident. Approximately 80% of these suicidal students remained in college and felt they had made the right choice. This same group was asked what the administration could have done to help prevent their behavior. Most of them (80%) had no suggestions and the remainder suggested counseling. When asked what the administration could have done to help after the incident, two subjects suggested counseling and one suggested "a few days to recover before hitting the books again" (J. Bernard & M. Bernard , 1982, p. 412). In contrast, the non-suicidal group in this study had multiple suggestions for both preventive and post-incident help, involving counseling, hot lines, support groups and faculty support.

J. Bernard and M. Bernard (1982) drew some conclusions from this study that relate to institutional response. They suggested that requiring a student to withdraw from school after a suicide attempt may be a reaction to the wrong factor and may exacerbate the loneliness and isolation which are primary. It may be erroneous, they pointed out, to assume that college age suicidality is due to something inherent in the status of college student. Suicidality may be related to family and social problems which become overwhelming to the person while in the college environment. They also suggested that it may be the suicidal students' feelings of isolation and hopelessness that prevent them from seeking or expecting any help from the college. They also may be afraid they will be dismissed.

In M. Bernard and J. Bernard 's (1980) study, contacting parents was found to be one of the options college administrations take in response to student suicidality. Solky, McKeever, Perlmutter and Gift (1988) discussed this issue from a family systems

perspective. They pointed out that college mental health services are often reluctant to involve the students family in crises due to confidentiality issues, the individuation process of the student, and the need to safeguard the treatment relationship. They suggested that when a student is unable to function adequately, the college administration assumes a position of en locus parentis if the student's parents are not involved. They believed that the administration will stress an already dysfunctional system even further by usurping the parental position .

A family systems perspective views the student's disturbance as a reflection of the family's dysfunction. This dysfunction often involves confused family roles and a parental relationship which is inadequate to support the student's independence. Solky et al. (1988) expected that early family involvement in the cases of serious suicidality would lead to a productive alliance with the family and a positive outcome to the student's treatment. They theorized that an alliance with the family will prevent any power struggle between the parents and the therapist which might further immobilize the student.

In their study of variables related to suicidality, Wright, Snodgrass, and Emmons (1984) concluded that persons experiencing serious suicidality tended to have a history of family difficulties dating back to childhood and early adolescence. Their study found these students experienced inner turmoil, poor self-image, dissatisfaction with life, and often had substance abuse problems. They made the following suggestions involving primary and secondary preventive responses which could be implemented by student administrative personnel:

1. Factual information about suicide should be given to the university community, including students.

2. Responsible persons should be encouraged to report suspected suicidal students to the counseling staff.

3. Peer networks, support groups and referral systems should be available in the campus residence areas.

4. Listening skills and crisis intervention should be taught to the resident living staff.

5. Counseling should be readily available to students in a wide range of services, such as crisis hot lines, substance abuse counseling, stress management, and learning assistance.

In the case of serious suicidal threats or attempts, Wright and his associates (1984) suggested these tertiary preventive measures:

1. Counseling staff should be aware that disruptive family relationships may have been precipitating factors and should be explored in counseling.

2. Reactions and treatment should be immediate, directive and ongoing.

3. Reactions and treatment should be coordinated among all appropriate campus administrative agencies.

4. All students who have made suicidal gestures should be followed by the counseling center as long as they remain in school.

Preventive Programs

Programs developed by colleges and universities which serve as preventive measures to suicide include credit courses, education and training for students and staff, and crisis response programs.

College courses on suicide. One of the primary level preventions suggested by Wright et al. (1984) was that the university community, including students, be given factual information about suicide. Since Kubler-Ross (1965) published her book on death and dying this subject has been discussed more freely and in more contexts (Stefan, 1978). One of these contexts has been the university curriculum. College courses in death education have increased and can serve as a vehicle for students to address suicide issues.

One of the fears expressed about such courses was that they would increase the propensity of students toward suicide (Rosenthal, 1983).

Three studies have been done in the past 15 years which address what kind of students will elect a course about death, what changes in attitudes the course produces, and whether a course on death education increases students' suicidality (Hoelter & Epley, 1979; Rosenthal, 1983; Stefan, 1978). Stefan's article outlined a course developed in a midwestern college and reported the results of an evaluation survey which was conducted six months after the course concluded. This course was structured around three units of study with information on suicide offered in the unit on practical applications of death education. Since his evaluation survey did not include a question about suicidality, no conclusions could be drawn about the course's impact on that issue. One area of student response seemed important in light of the relationship between family dysfunction and suicidality (Adam et al., 1982; J. Bernard & M. Bernard , 1982; Garrison, 1989; Henden, 1975a, 1975b; Wright, 1985; Wright et al., 1984). When asked what they thought needed changing in order to increase knowledge about death education, 48% suggested improved communication between parents and children. Twenty-nine percent of the students expressed a need for additional courses.

Hoelter and Epley's (1979) study was conducted to assess the impact of a death education course offered at a midwestern university, to examine the death-related attitudes of students electing the course, and to assess the therapeutic value of the course. Rosenthal's (1983) research, conducted at a California university, investigated whether death education courses would attract students with lower death anxiety, greater acceptance and potentiality for suicide, and would decrease the participants' level of death anxiety and suicide potential.

Both Hoelter and Epley (1979) and Rosenthal (1983) used comparison groups in their studies. The death education subjects in each case were matched with students

enrolled in another course in the same or a related field. Both studies included pretest and posttest assessment measures which provided comparison scores for variables of death anxiety, and attitudes toward death and suicide. No significant differences were found in the Hoelter and Epley study between the pretest and posttest results of the experimental group or the control group. Significant results between groups on the pretest in the Hoelter and Epley study indicated the experimental group had more favorable attitudes toward suicide under a variety of conditions than the control group. They did not report on significant results found in the posttest analyses.

Rosenthal (1983) found significant differences between groups on both the pretest and the posttest. On the pretest the experimental group reported more favorable attitudes toward suicide and more of them had considered suicide. Posttest analyses showed that in addition to these differences, the experimental group reported significantly more intellectual discussion of suicide. Pretest comparisons indicated the control group was more reluctant to confront death and more avoidant of death-related symbols but was not more fearful of their own death than the experimental group. Posttest results showed significant differences between groups on all three of these factors.

Results from both studies indicated that students who enroll in a death education course are likely to have more accepting attitudes toward suicide but they may still fear their own death. The Hoelter and Epley (1979) study showed no differences between pretest and posttest results for the experimental group and concluded that the course did not significantly change the attitudes of the subjects toward death. Rosenthal (1983) found that death education courses may attract students with more liberal attitudes toward suicide, greater acceptance of the death process and less avoidance of death. She concluded that courses will tend to lessen students' fear of personal death but will not increase the potentiality of their suicide.

Both of these studies used some assessment measures for which validity and reliability were not determined. The control course and the experimental course in the Hoelter and Epley (1979) study may have been too similar in content to assure appropriate comparisons on the dependent variables. Not enough information was given about the data and the analysis to determine if appropriate tests of comparison were used. Generalization of results of the study cannot be made.

Educative programs. Some colleges and universities have responded to student suicidality with programs and interventions designed to avert future incidences. These responses are examples of primary and secondary level prevention. Ottens (1984), Phillips (1983), and White and Rubenstein (1984) described such programs. Ottens (1984) outlined a program in a New York university and presented the results of a study undertaken to evaluate the program. The program consisted of two training sessions of two hours each which were taught by various staff members of the campus psychological services. Session one presented the psychological states common to persons in crisis, barriers to understanding and communicating with suicidal persons, and assessment of suicidal intent. Session two covered intervention techniques and referral procedures and also provided time for role play experiences and discussion. A questionnaire was designed to assess increases in the participants knowledge, positive changes experienced by the participants and any impact on the campus community. This questionnaire was given before and after the training to 31 participants including peer counselors, faculty advisors and residence hall staff. The questionnaire was also administered to a control group consisting of 14 professionals in the psychology field.

Spearman rank correlation coefficients revealed close correspondence between pre- and posttest rankings of the experimental group and the rankings of the control group. While there were evidently no significant differences, Ottens (1984) highlighted some notable changes from pre- to posttest on several of the items. Participants were more able

to focus on immediate feelings after the training. They also took more responsibility for appropriate action and getting immediate help. Ottens suggested the changes seemed to reflect more willingness to approach a person in crisis and more willingness to assume an empathic yet directive role in the situation.

In another study at the same university, White and Rubenstein (1984) assessed the impact of a campus outreach program "aimed at heightening awareness of and capacity to respond to life-threatening crises" (p. 42). They compared three groups in their study: (a) a group of recent arrivals to the campus composed of transfer students and international students, (b) a group of randomly selected students from the psychological services clientele which included resident and academic advisors, and (c) a no-treatment control group.

A training program of four sessions of one hour each was given to Group I. These sessions provided information about the psychological states experienced by persons in crisis, instruction on how to assess for suicidal risk, techniques for intervention and referral in suicidal crises, and opportunities to role-play the skills that were taught. Group II was given two hours of instruction covering the basic material taught to Group I but without the role-play opportunity. Group III served as a no-treatment control group and was given the opportunity to participate in the program after the study was completed. A 30 item suicidology and crisis intervention questionnaire was administered to all groups both before and after the training period.

T-test analyses of the questionnaire scores revealed significant gains from pre- to post test administrations for Group I and Group II while Group III results demonstrated a significant loss. ANOVA applied to the pretest scores revealed significant differences between the groups prior to treatment. ANCOVA results, using posttest scores as the dependent variable, group membership as the independent variable, and pretest scores as the covariate, indicated that posttest scores were differentially affected by group

membership. Further ANCOVA revealed significant differences between posttest scores of Groups I and III, indicating the efficacy of the four-session training program. Differences between Groups II and III were also significant, indicating the value of the two-hour training modality. These results demonstrated the efficacy of both formats of the training program in educating students and staff about suicidality and crisis intervention. White and Rubenstein (1984) suggested replication of this research using a control group randomly selected from the student directory. They also suggested using Group I and Group II subjects who are matched for psychological awareness. These group composition changes would increase the validity of this study and provide a stronger basis for generalization.

Another part of this study involved assessing the impact of daily radio announcements publicizing the campus counseling services during critical times before final exams. Two methods of data collection were implemented to assess the efficacy of the publicity. Telephone surveys were conducted with a random sample of university students once before the radio announcements and with another random sample after the announcements. The pre-announcement sample served as a control group for the post-announcement sample. The second method involved use of a revised intake form at the campus counseling service during the month of finals. This form was used to determine the proportion of new clients that had learned about the service through the radio publicity. These data were compared to the data from the same period during the previous year.

Analysis of the clinic intake forms indicated a significantly greater proportion of new clients came to the clinic as a result of radio advertising in 1981 than in 1980. The number of new clients who utilized the clinic services as a result of the radio publicity increased significantly between 1980 and 1981. Of the new clients, over half were in serious life-threatening crises and had not intended to reach out for professional help. White and Rubenstein (1984) concluded that the use of radio publicity was very effective in increasing students' use of the counseling services and in reaching students in crisis before

their situation became even more serious. They suggested further studies to eliminate any alternative explanations of the results such as environmental factors unique to the exam period in which radio announcements were used. Generalization of these results to similar institutions appears to be warranted.

Crisis Training. Implementation of primary and secondary level preventive measures does not eliminate the need for tertiary level interventions. It is increasingly necessary for college and university personnel to respond to crises of serious suicide threats, attempts and deaths due to suicide, and some institutions are inadequately prepared for these events (Davis, 1985; Hersh, 1985; Mathiasen, 1988; Peplau, 1986). Guidelines for the development and/or evaluation of crisis response training programs have been described by several researchers in the past six years (Butler & Statz, 1986; Hersh, 1985; Webb, 1986). Webb (1986) reviewed recent literature and surveyed a variety of existing crisis programs in order to develop a preventive training program for the staff at a New York university. She proposed that emphasis should be placed on helping peer friends of suicide crisis victims because they are especially vulnerable to suicidal behavior. Her literature review highlighted preventive responses to suicidal crises which involved intervention by counselors, faculty, administrators and residence hall staff. These interventions included not only individual counseling and support but also such help as tutoring for academic difficulties, training of residence staff, and special attention to stressful times of the school year. The beginning of the academic year and midterm/final examination periods are times when temporary stress can cause long-term difficulties to become overwhelming. The peak danger period for college student suicides is during the first six weeks of the semester (Seiden, cited in Webb, 1986).

Webb (1986) distributed a 12 item survey to 50 New York colleges and universities and 25 completed questionnaires formed the basis for the results. Respondents were asked to describe any existing suicide response procedure. If there was none, they were asked to

describe how a suicide would be handled. Twenty percent of the colleges had procedures in place. These included concern for survivors, counseling of peers, mobilization of professionals and notification of parents. Where there were no procedures in place, descriptions included notification of authorities, administrators and parents, gathering facts, preparing official statements and counseling for friends and family. Respondents were also asked how suicidal gestures were handled. One of the colleges had no on-campus counselors to work with suicidal students, six could offer unlimited services and others could offer counseling services for varying time limits. Only six of the colleges reported their services were adequate to deal with suicides. When asked about the degree of student concerns about rising suicide rates, 68% of the respondents were unaware of student concerns. Six of the colleges had offered a special program of some kind on suicide during the past year and two were planning one. Webb commented that overall incidence of suicide was low among these colleges and several reported that existing services had averted suicides through effective crisis intervention.

Butler and Statz (1986) also conducted a survey of colleges and universities to gather information regarding policies and procedures concerning student suicide. They surveyed a random 30% of Big Ten Conference and Big Eight Conference universities and a comparable number of Jesuit institutions. Half of the respondents had a policy statement about student suicide, 25% had specific death report forms and 25% had defined follow-up procedures. Only one of the respondent schools evidenced a policy and procedural structure which could be implemented in case of student suicide and none of the schools had a training program for student affairs and/or residence hall staff.

On the basis of her literature review and survey Webb (1986) outlined a preventive program for response to attempted and completed suicides. She emphasized the need for written guidelines to direct campus-wide response. Procedures for all university personnel with any responsibility should be listed with necessary information such as phone numbers

of all persons to contact. Butler and Statz (1986) described in more detail the sequential steps needed in such procedures and the importance of having these procedures in place and well understood before any crisis event occurs. They suggested that student affairs staff is usually the first to become aware of a suicide and will be responsible to notify campus security and the appropriate departments and agencies such as police, university public relations, campus chaplain and counseling staff.

As part of a preventive program, Webb (1986) and also Butler and Statz (1986) stressed the importance of staff training programs. Webb stated these training sessions should be held yearly for all residence and support staff. She suggested these sessions should include information on how to recognize suicidality, precursors to suicide, referral guidelines and what constitutes the grief/mourning process. Butler and Statz (1986) developed a similar outline that included an overview of concepts related to death and suicide, grief and mourning processes, evaluation and intervention issues, and community resources and referrals.

Preventive response also includes immediate response to a completed suicide. No empirical studies have been done to assess the value of suicide response programs, but several such programs are described in the literature. Once a suicide occurs, attention and treatment becomes focused on the survivors. Characteristics of suicide bereaved persons include guilt, denial, shame, avoidance, regret, grief, rage, confusion about life and death, and feelings of worthlessness and helplessness (Butler & Statz, 1986; Webb, 1986). Webb (1986) suggested a series of supportive procedures which could be adapted by institutions to fit their individual situations. She advised that a crisis counseling team be mobilized and outside consultants be used for students and administrative personnel as needed. Contact with friends of the victim should be made as soon as possible and peer support structures implemented. Expression of feelings among the college community and commemoration of the death should be encouraged, but glamorizing or romanticizing the

death must be avoided. Webb emphasized the importance of resuming routine activities as soon as possible with allowances being made for those who are experiencing more difficulty. She suggested that grief reactions can occur long after the initial crisis period, especially around holidays and anniversaries. Students should be prepared for this possibility through educational meetings and small group support structures.

Summary of Preventive Responses

Suicide prevention involves responses to the suicidal student from various groups, in various modalities and on several levels. The research literature reviewed in this section described some preventive response efforts and programs. Many of the studies were based on surveys of administrators to determine existing responses to suicidality. Some studies reflected data from students reporting their own and their peers' experience with suicidality. Other studies have compared sample groups in order to evaluate some aspect of existing or proposed preventive measures. Results of these studies can be summarized according to the level of preventive response they fit.

Response at a primary level is needed as an ongoing component of college and university life in order to reduce the risk of suicidality. Prevention at this level is accomplished through supportive systems such as socially satisfying activities and networks among students, positive social acceptance of the counseling process, opportunities for exploring spirituality issues, and faculty involvement with students beyond the academic relationship. Stalcup (1978) emphasized the role of a faculty member as the transmitter of value systems and as a filter for students' view of reality. Academic courses addressing death and suicide, and seminars addressing the factors contributing to suicide are other primary prevention measures. Most studies demonstrated the need for these measures but their effectiveness as primary level preventive responses has not been assessed. Hendrickson and Cameron (1975) found that administrators might underestimate the extent of suicidality on their own campus, and Holmes and Howard's (1980) study

indicated that experienced health and psychology professionals were best able to assess suicide potential. Whitaker (1986) emphasized the need for an effective counseling service integrated with the college community. Mishara (1982) and Westefeld and Furr (1987) emphasized the need for support systems at all levels: peer, classroom and administrative. Several studies on academic courses dealing with death demonstrated the value of such courses for information and awareness of issues (Hoelter & Epley, 1979; Rosenthal, 1983; Stefan, 1978).

Secondary level prevention, focused on decreasing the amount and severity of suicidal cases, was addressed by ongoing training programs and seminars for student affairs personnel. Training programs for students and administrators were described by Ottens (1984), Phillips (1983), and White and Rubenstein (1984). The training included information on student crises, how to recognize suicidal behavior and how to respond. These programs were effective in promoting awareness, understanding and response capacity for the persons trained. Counseling for students who are experiencing suicidal thoughts and behaviors was an important secondary level prevention mentioned by students in many of the surveys (Mishara, 1982; Westefeld & Furr, 1987; White & Rubenstein, 1984).

Prevention of repeated threats and attempts, and appropriate responses to attempts and actual suicides are foci of tertiary prevention. These include establishing administrative procedures for dealing with suicidal students, development of suicide response plans and accessible emergency help for suicidal students. The efficacy of women peer counselors was indicated in Tucker and Cantor's study (1975) and other studies demonstrated the helping value of peer relationships (Gibson, Poling & Westlake, 1980; Limbacher & Domino, 1986; R. Wellman & M. Wellman, 1988). Administrative responses to suicides, attempts and threats were diverse, ranging from dismissal of the student to supportive involvement (J. Bernard & M. Bernard, 1982; M. Bernard & J. Bernard, 1980). Some

colleges and universities had response programs in place, others did not, and some reported a serious lack of ability to respond (Butler & Statz, 1986; Webb, 1986).

Summary and Conclusions

Generalization of these studies to the United States college and university population will be summarized in this section. Preventive measures described in the literature will be discussed in light of their response to the factors which have been found to contribute to suicidality. The section will conclude with suggestions for research which will clarify and extend current understanding of student suicidality.

Generalization Issues

Generalization of these studies on suicidality is limited due to incompatibilities in several areas. One area is that of the assessment measures used. Some of the researchers used standardized instruments with tested reliability and validity. Others developed questionnaires and surveys specific to their study. These had varying histories of previous use and analysis. Since different measures were used in different studies, between-study comparisons are questionable. Other assessment incongruities occurred in the area of objectivity. Some measures were constructed with forced choice options such as true/false, multiple choice or Likert-type scale responses. Others asked for more subjective responses such as the respondents' estimations, feelings or opinions about specific events or issues. The choice of the assessment measure can also result in incongruities. Cole's (1988) study on hopelessness, depression and suicidality demonstrated that the choice of social desirability measure significantly affected the results on dependent variables.

Another area of incongruity involves the definition of terms. Most of the studies depended on the respondents' definition of the terms which are crucial to these studies: suicidal thoughts, suicide threats, suicide attempts. Only one study reported giving subjects a definition of these terms (J. Bernard & M. Bernard , 1982). This lack of

standardization severely threatens comparability within studies and prevents comparisons between studies on suicidality variables. There were also variations between studies in the time period measured. Some of the studies assessed past suicidality, some assessed current suicidality and some did not specify time. In addition, results of studies which assess past suicidality may be affected by a retrospective bias: Students who are less suicidal at the time they report may be less likely to remember and/or report their past suicidal behavior.

Generalization of results to the entire United States college and university population is also questionable for most of these studies. M. Bernard and J. Bernard 's (1980) survey of college and university responses to suicidality was nationwide and represented the response situation in the United States at that time. Their study needs replication in order to generalize to the present. More recent studies by other researchers have been in limited geographic regions and with a limited variety of institutions. Suicide statistics show some significant differences between regions of the country. For example, the suicide rate for the western section of the United States is 58% higher than the northeast region and the rate in Nevada is three times that of New York and New Jersey (U.S. Bureau of Census, 1990). A study conducted in New Jersey investigating factors which may contribute to suicidality will not necessarily give the same results as a study done in Nevada. Few of the investigations involved subjects from different geographical areas, and only three of them included samples from the western geographical area (Hendrickson & Cameron, 1975; Limbacher & Domino, 1986; Rosenthal, 1983).

The size and type of institution in which the study is conducted can also affect generalization. Several studies used samples from colleges and universities of various sizes (Boor, 1976; Carson & Johnson, 1985; Westefeld & Furr, 1982). These offered more dependable generalization to the college population. Some of the studies were done at institutions with primarily commuter populations. Westefeld and Furr (1987) found that

students in the small, residential college experienced many more problems with depression and suicide than did students in a larger commuter institution and those at a larger residential institution.

Another threat to generalization involves the university groups from which subjects are recruited. A majority of the studies used psychology students as a subject pool. Since most students are required to take an introductory psychology or social science course as part of their general education requirements, the introductory level classes tend to be representative of a college population. However, the context of such research (a psychology course) may bias results. When subjects are recruited from advanced psychology courses as in the Diamant and Windholz (1981) study, this limits the generalization of results due to non-random characteristics of the sample.

The gender of the subjects in studies on factors contributing to suicidality can also be a generalization issue. Statistics from 1986 indicate that men committed suicide at over four times the rate of women in the 15-24 year-old age bracket (U.S. Bureau of the Census, 1990). The studies reviewed have found no significant gender differences on any of the variables related to suicide ideation and attempts. In two different studies (M. Wellman & R. Wellman, 1986; R. Wellman & M. Wellman, 1988) no gender differences were found on these variables. Rudd (1989) found equal percentages of men and women experienced the same intensities of suicidal thoughts and behavior. Attempts by women were higher, but not statistically significant. Whitaker (1987a, 1987b) stated that women are more likely than men to use campus counseling services. He suggested that females are not more emotionally disturbed than men but are more expressive and ask for help more readily, while men are more emotionally restricted and more stigmatized in our society for asking for help.

In light of these gender differences, suicidality study samples which do not reflect population-wide male/female percentages may limit generalization of results. Further

research is needed in order to determine the effect of gender on the factors contributing to suicidality. Westefeld and Furr's (1987) study suggested that students in the small, predominantly female college reported more suicide related difficulties than larger, more heterosexual universities. Whether this difference was related to gender, size of the institution, or residential situation was not a focus of the study.

Response to Contributing Factors

Factors which contribute to suicidality included feeling states, stress, cognitive distortions, a history of family dysfunction and social alienation. Contributing factors did not operate alone. Most of the studies indicated these factors operate in combination, with some being more salient at different points along the suicide continuum. Studies addressing preventive response to suicidality demonstrated some effectiveness of academic courses on students' understanding and acceptance of death and dying. Seminars focused on training students and administrators how to recognize and respond to suicidality were also found effective. Plans of intervention and response to suicidal students' threats and attempts were described although none of the studies evaluated their success.

Preventive response to suicidality by colleges and universities occurs at a tertiary level when there is a suicide emergency on campus. Institutions reflected varying capacities to respond in such emergencies, and some reported insufficient preparation and resources. Some of the studies indicated that students who have been and/or are suicidal tend to develop relationships with each other on the basis of this commonality. Institutions which do not have adequate resources for response to suicidal emergencies may be at increased risk for student suicidality because of insufficient support for those who were closely involved with the victim.

Primary and secondary levels of prevention were successfully implemented in some institutions, but the research literature does not indicate how successfully these measures address contributing factors. Factors found to contribute to suicidality are addressed most

effectively at primary and secondary levels of prevention. Feelings of depression, hopelessness, helplessness and loneliness require intervention before they reach a point on the continuum where suicidal feelings become apparent. Social activities, social groups and networks that facilitate inter-communication and interdependent relationships need to be an integral part of the student community life. Spiritual aspects of community and individual life may be important areas of primary prevention. Courses, seminars and study groups which address feeling states and response to stressors are other primary and secondary level preventive measures. Research has demonstrated the significance of loss and poor family relationships in the development of suicidality. Campus counseling centers with a focus on personal growth and preventive mental health can provide a place for students to work through early childhood and relationship issues before they result in suicidal crises.

Further Study

Several areas of further study are suggested by these findings. There is a great need for studies which assess the effects of prevention measures on specific contributing factors as well as suicidality in general. This area of research would provide a basis for institutions to implement prevention programs which focus on salient factors. Most of the studies need to be replicated with nationwide samples from a wider variety of institutions in order to increase generalization of results to the national population. More longitudinal studies similar to the Bonner and Rich (1988) study will help differentiate between temporary and long-term contributing factors. Longitudinal studies with suicidal samples could provide better understanding of factors which contribute to the process of suicidality as well as effective preventive responses. The relationship between spirituality and suicide is an area in which little research has been done. Few studies have addressed this issue, and there were no studies reported in which this relationship was the primary focus of the research. Spirituality may be a significant internal preventive response to such feeling

states as hopelessness, helplessness and loneliness; and to alienation from significant others. If research substantiates such a relationship, the spiritual aspect of student life may be a crucial area of preventive response to suicidality.

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